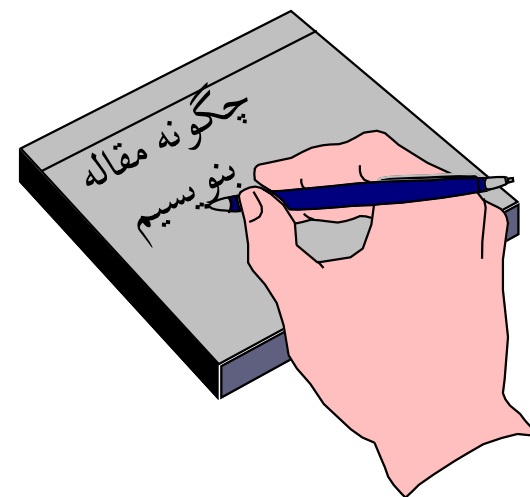


چگونه مقاله بنویسیم؟

دکتر مرتضی قوجازاده

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Scientific Writing in Medical Sciences

Research Output

- Three different research output are expected from research proposals:
 - 1- Paper
 - 2- Patent
 - 3- Change

Why “Scientific Writing”?

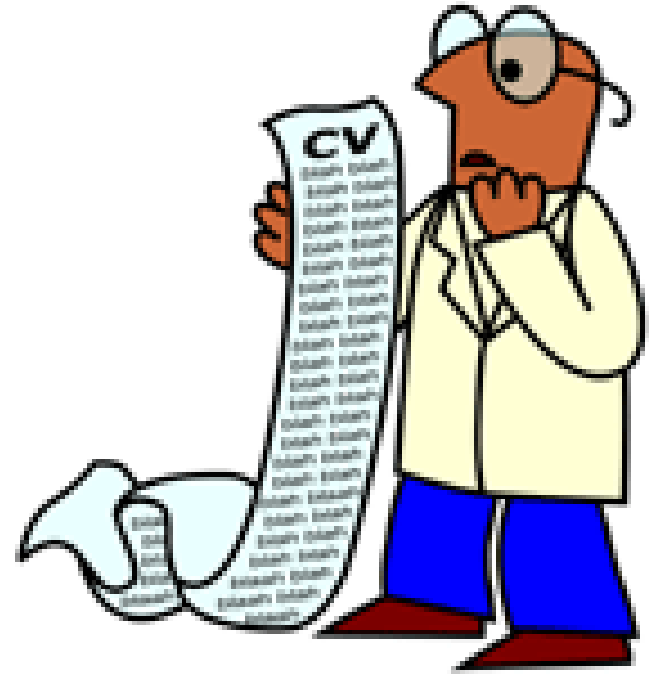
- The purpose of **scientific writing** is to convey ideas and facts about scientific work.
- Scientists understand and criticize each other's work through their articles.
- Thus, **scientific writing** should be intelligible to readers at the first reading.

Why Publish?

- Knowledge contributions
- Ensures scientific rigor
- Allows feedback (improves work)
- Promotes career
 - Document productivity
 - Document impact on field/reputation
 - Advertises your lab for future trainees
- Improves chances of funding
- Fulfills an obligation (public monies)

Evaluating an Academic Person through his/her CV Papers

- Number of papers
- Rate of publication
- Quality of journals
- Position in list of authors
- Focus



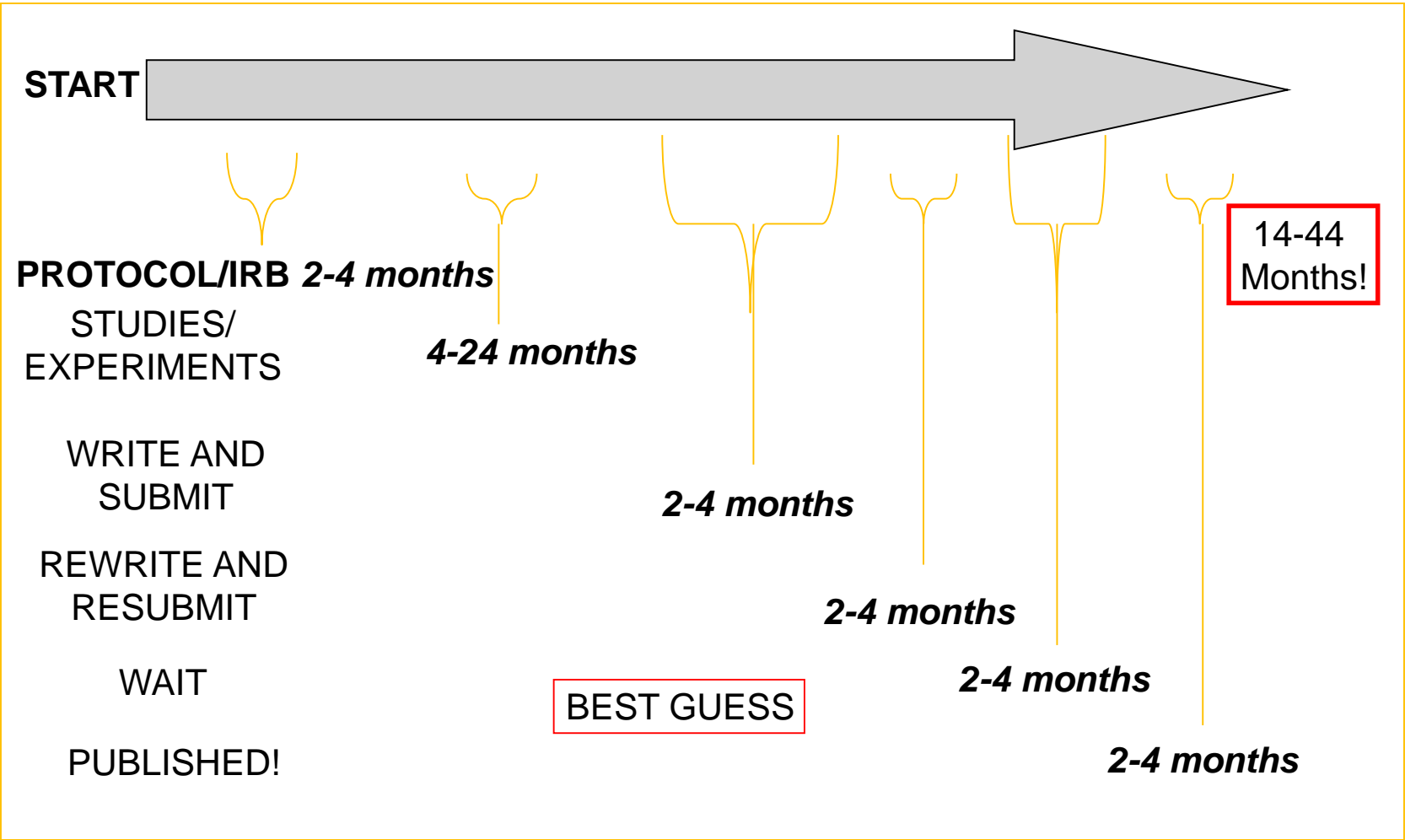
The Art of Scientific Writing

✓ Publish or Perish!

Steps in Scientific Writing

- Design well
- Decide politics
- Choose journal
- Read instructions to authors/papers
- Set framework
- Prepare drafts
- Distribute
- Polish
- Submit

What is the gestational period for a clinical science publication?



Two Types of Studies

- Primary Study
- Secondary Study

Primary studies

- Experiments
- Clinical trials
- Surveys

Secondary studies

- Reviews (Overviews)
 - Narrative reviews
 - Systematic reviews & Meta-analyses
- Guidelines
- Decision analyses
- Economic analyses Review Article

Types of Medical articles

- Original Article
- Review Article
- Case Reports
- Editorial
- Short Communication (short papers)
- Letter to Editor
- Personal Views

Letter

- Stick to the point
- State the problem, issue or hypothesis
- Give the context
- Outline your comment, solution, viewpoint
- Give a strong conclusion
- Note limitations

Editorial

- Write for your readership (broad?)
- Be controversial and thought provoking
- Being subtle is often more powerful

Short communication

- Increasingly common
- Concise introduction
- Present data and discuss it shortly
- Only a few tables or figures
- Number of words limitations

Is your paper a paper, a brief or a research letter?

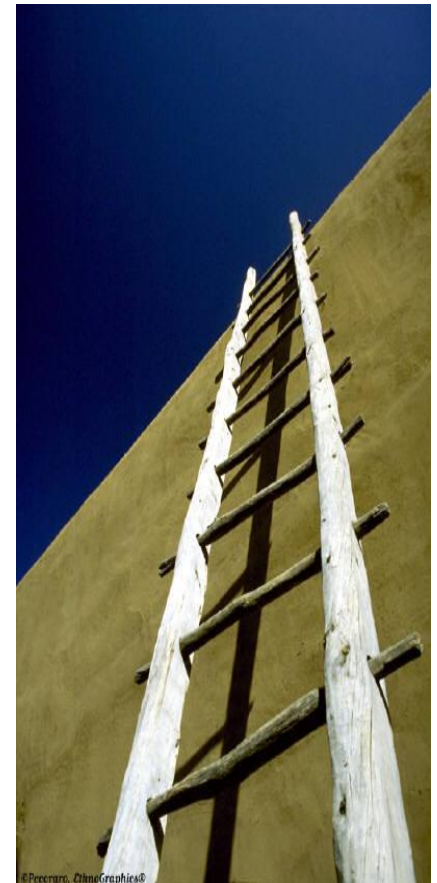
- Easier to get letters & briefs accepted .
- They make you indexed easier !
- Decide whether you should submit it as a brief or letter firstly.

Case Reports

- Medical history of a single patient in a story form.
- Lots of information given which may not be seen in a trial or a survey.
- Often written and published fast compared to studies
- e.g. Thalidomide

The Hierarchy of Evidence

1. Systematic reviews & meta-analyses
2. Randomised controlled trials
3. Cohort studies
4. Case-control studies
5. Cross sectional surveys
6. Case reports
7. Expert opinion
8. Anecdotal



The traditional IMRaD

- Introduction
- Methods
- Results
- Discussion

The Basic Structure of an Article

TITLE

(S)Summary (Structured Abstract)

(I) Introduction (What Question was asked?)

(M)Methods (How was it Studied?)

(R)Results (What was Found?)

(A)Analysis (How data was analysed?)

(D)Discussion(What Do the Findings Mean?)

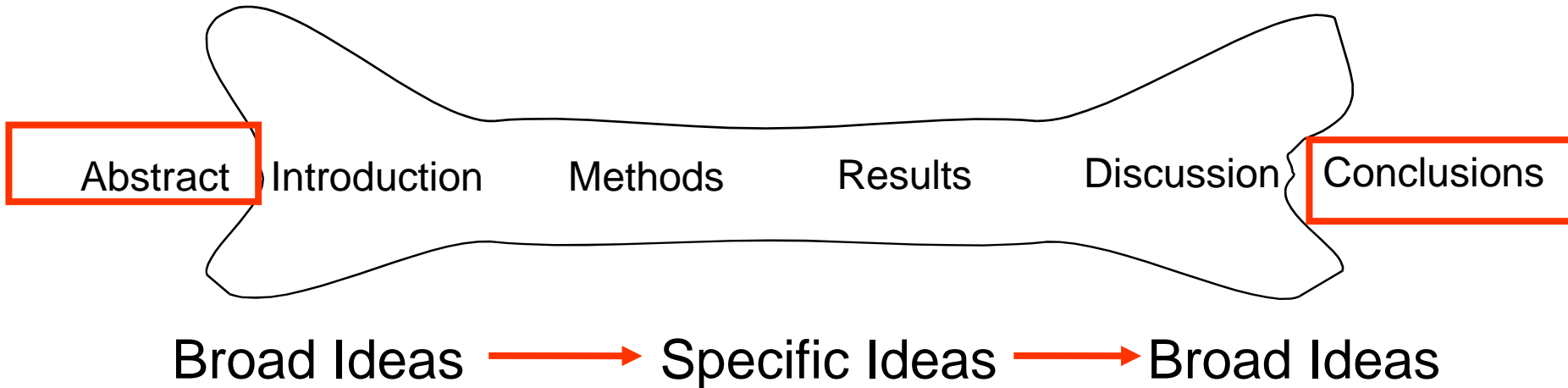
Acknowledgements

References

Main Components of an Article

- Introduction: Why did you start?
- Methods: What did you do?
- Results: What did you find?
- Discussion: What does it all mean?

“Bowtie” Model For a Scientific Paper



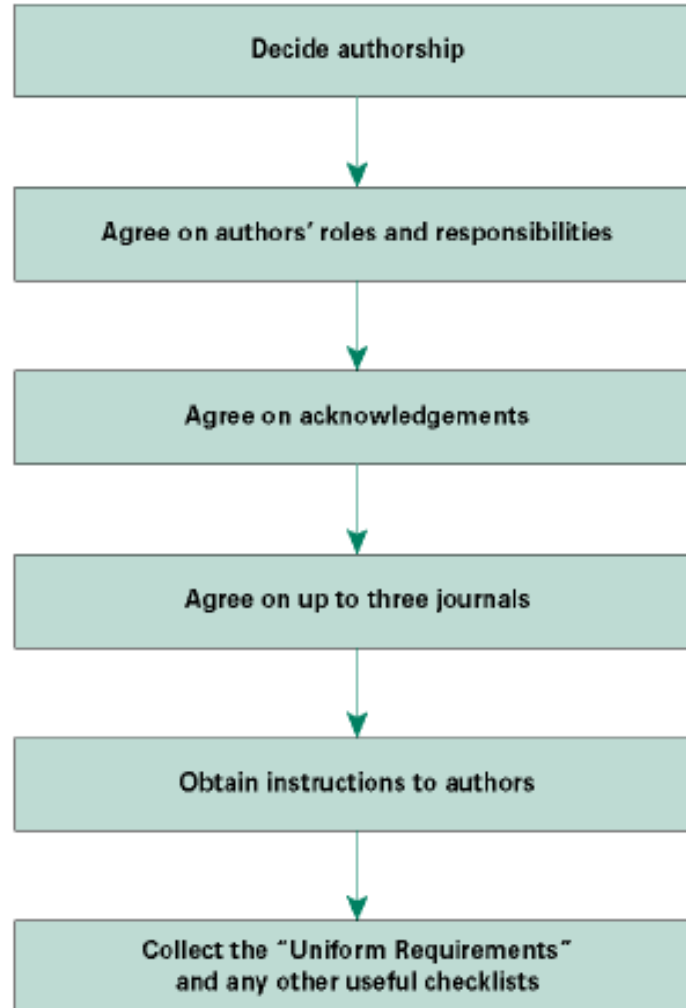
A full paper may contain:

- Title
- Authors and Affiliation
- Abstract
- Introduction
- Methods
- Results
- Discussion
- Acknowledgments (optional)
- References

Initial steps

- 1-Understand the type of manuscript you are writing.
- 2-Re-evaluate your project.
- 3-Plan the sections and subsections you need.
- 4-Match your content to your readers' knowledge.
- 5-Keep information specific rather than general.
- 6-Write in plain language. Keep your sentences short.
- 7-Use tables, diagrams, flowcharts and graphs.

Politics first!



Order of writing?

1. Results
2. Methods
3. Introduction
4. Discussion
5. Abstract
6. References

More reading

- Hall GM, ed. **How to write a paper**. London: BMJ Publishing Group.
- **Advanced Writing**, Floresita V.Bustamante, SAMT
- **Essentials of Writing Biomedical Research Papers**, Zeiger
- **Scientific Writing Easy when you know how**. Peat J. BMJ Publishing Group. 2002.
- The Vancouver Group. **Uniform requirements for manuscripts submitted to biomedical journals**. www.icmje.org

How to Write Introduction Section?

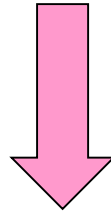
Introduction

- Before you begin, answer the basic questions:
 - What do I have to say?
 - Is it worth saying?
 - What is the right format?
 - Who is the audience?
 - What is the right journal?

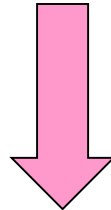
Introduction

- General, concise description of problem
 - background to the work
 - previous research
- Where that work is deficient
 - how your research will be better
- State the hypothesis
- About 3 to 4 paragraphs

Paragraph1:
What we know



Paragraph2:
What we don't know



Paragraph3:
Why we did this study

Introduction

1. Existing state of knowledge
2. Gaps in knowledge which research will fill.
3. State what you Intend to do & the purpose of article
4. Give pertinent references
5. Summarize the rationale for study or observation
6. Define specialized terms or abbreviations you want to use

Inverted pyramid

- The structure should funnel down from a broad perspective to a specific aim

Oxidative stress plays an important role
in....

When LDL particles are oxidized ...

Antioxidants are important...

...Paraoxonase...

Introduction

- Don't make it a review article
- Don not include methods, results and discussion
- Don't put down every all previous studies & their data gaps
- Don't explain pathophysiology irrelevant to your study

Introduction

- Tell why you have undertaken the study
- Clarify what your work adds
- Follow the best advice
- Keep it short
- Make sure you are aware of earlier studies
- Tell about importance of your study
- Don't baffle your readers
- Give the study design
- Think about using journalistic tricks

Introduction

- To write an effective introduction you must:
 - Know your audience
 - Keep it short
 - Tell readers why you have done the study
 - Explain why it is important
 - Convince readers that it is better than others
 - Try to hook them!